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Research

Picking teams: Student workgroup assignment methods in U.S. schools of pharmacy

Jessica W. Skelley, PharmD, BCACP*, Janssen M. Firth, PharmD, Michael G. Kendrach, PharmD, BSPharm, FASHP

Department of Pharmacy Practice, McWhorter School of Pharmacy Samford University, Birmingham, AL

Abstract

Objectives: Determine the most common methods to create student teams for course work/projects along with reporting faculty perceptions of the learning effectiveness, team efficacy, and team function via these methods; describe student team utilization and evaluation within an academic year.

Methods: An online survey was distributed via e-mail to all 130 schools/colleges of pharmacy in the United States. Responders identified method(s) used to create student teams, and ranked (via a four-point scale) effectiveness for the method(s) they used. This project was approved by the investigators' institutional review board.

Results: A total of 49 (38%) pharmacy schools responded to this survey. Most responders (65%) delegate the responsibility to various faculty and staff versus a single person/office to create the student teams. Randomization was the most common method (80%) used, followed by student self-selection and work experience. In terms of student learning, responders perceived using work experience, grade point average, and randomization as effective methods; whereas, student self-selection, gender, and personality testing were perceived less effective. Only 43% of the responders used the same teams for all courses within the same semester; 74% reassigned teams each semester.

Conclusion: Literature has been published reporting the value of student team/group learning within courses. However, this is the first published report specifically identifying the methods to create the student teams along with measuring the perception of team assignment methods. Although multiple methods were used to create student teams, additional research is needed to quantitate and assess which of these methods are associated with improved learning outcomes.

Keywords: Team-based learning; Active learning; Pharmacy; Education; Curriculum; Groups

Introduction

Though the passive lecture format of academic instruction has been a staple in institutions of higher learning for centuries, numerous educational authorities have recognized the limited ability of lecturing to instill an attitude of lifelong learning in students.[1] In the health sciences, limitations to the use of lecture-based models as a sole teaching method has been identified dating back to at least 1910, when Abraham Flexner[2] identified the need for active learning in medical education programs. Recently, a trend away from traditional lecture-only formatted courses has become evident in pharmacy classrooms across the United States (U.S.), buoyed by recommendations from organizations such as the American Association of Colleges of Pharmacy (AACP). Additionally, AACP has called for pharmacy curricula to create interactive learning experiences that encourage self-directed student learning.[3]

* Corresponding author: Jessica W. Skelley, PharmD, BCACP, McWhorter School of Pharmacy Samford University, 800 Lakeshore Drive, Birmingham, AL 35229.

E-mail: jmwhalen@samford.edu

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While some precursors of active learning techniques have been an instructional component in pharmacy schools for many years,[4,5] pharmacy education studies have been published since 2007 that evaluate the use of active learning methods to improve learning outcomes such as student engagement, critical thinking abilities, material retention, and course satisfaction (i.e., well-rounded students). Recognizing these potential benefits, in 2007 the Accreditation Council for Pharmacy Education (ACPE) adopted updated standards promoting the use of active learning strategies throughout the curriculum to develop expanded critical thinking and problem solving skills in pharmacy students.[6] Such requirements have furthered the expansion of active learning models throughout pharmacy education in the future. Similarly, within the 2013 Center for the Advancement of Pharmacy Education (CAPE) 2013 Educational Outcomes,[7] there is a heightened focus on developing skills such as team work, communication, and leadership, all of which can be developed through the use of students working together in small teams as part of the pharmacy curriculum.[7,8]

Students working in teams (or groups, as they are also commonly referred to within the literature) can manifest in several forms. Assignments involving group presentations and learning assignments are common within published literature.[9–11] Educational techniques such as problem-based learning (PBL) and team-based learning (TBL) also abound within pharmacy, nursing, and medical education literature.[8,12–23] However, almost all published literature on students working within teams examine educational outcomes at a point in time after students were divided into teams, without assessing the functionality and design of the teams themselves. Despite recognition of the careful formation and management of teams as the first foundational principle of team work (i.e., TBL),[24,25] surprisingly minimal literature has been published that addresses the ideal methods for creating student teams. Some studies do not identify methods for separating students into teams altogether. This paucity of information has also been identified in regards to the creation of student study groups.[26] For published studies where the authors identified team assignment techniques, instructors have assigned students to teams using various techniques [e.g., personality profiles, grade point average (GPA), and career goals] or by randomization. For example, one study for a self-care course identified group assignments by community pharmacy work experience.[27] Regardless of the method, minimal evidence has been published describing techniques that lead to "effective" teams.

The purpose of this study is to evaluate the use of student teams in U.S. schools of pharmacy in order to: (1) determine the most common methods used to create student teams; (2) report faculty perceptions of the effectiveness of various methods to create student teams by evaluating student learning, team efficacy, and team function; and (3) describe student team utilization and evaluation within an academic year. For the purpose of this study, effectiveness is defined as the capability of producing the intended or expected result, such as learning, completion of tasks, and promotion of team work and collaboration.

Methods

Associate Deans of Academic Affairs or Associate Deans with similar positions who oversaw curriculum implementation were identified for each of the 130 schools of pharmacy listed as regular or associate members of AACP in late summer of 2013. One of the investigators searched position listings in faculty and staff directories on each school of pharmacy website and/or called offices of the Dean for further information if no individual with the title "Associate Dean of Academic Affairs" could be located online. An e-mail was sent to each of these identified persons that invited them to participate in the study using a link provided that pointed to the online survey instrument. The project received Institutional Review Board approval from Samford University.

The e-mail invitation included a description of the study purpose and wording that the survey be completed by the most appropriate person(s) to answer the scope of the questions. The survey could be completed by multiple persons from a single school. These instructions were included because many U.S. pharmacy faculty members may be independently involved in the creation of student teams to deliver active learning content in their individual courses. The presence of multiple answers from one school of pharmacy in the resulting data set were assessed to prevent overlap of responding instructors within the same course at any one school through inclusion of a survey question asking each respondent to identify his or her school of pharmacy affiliation; however, no duplicate responses from within institutions were received. A disclaimer was included that stated that no specific school of pharmacy information would be reported in the study results. Data were collected over a three week period, with follow-up e-mails sent to non-respondents on two occasions (day 8 and day 14).

A survey instrument was developed using information from a literature search of the databases of the U.S. National Library of Medicine National Institutes of Health (PubMed) (January 1966 to October 2013) and International Pharmaceutical Abstracts (January 1975 to October 2013), along with *The American Journal of Pharmaceutical Education* and *Currents in Pharmacy Teaching and Learning*. The search terms that included "learning [MeSH]," "students, pharmacy [MeSH]," "education, pharmacy/methods [MeSH]," "curriculum [MeSH]," "team," "learning," "education, pharmaceutical," "group," and "assignment" were used. The literature search focused on the use of student teams (e.g., PBL, TBL, and group assignments) in schools of pharmacy. Search terms were used both individually and in combination, keywords, exploded terms, truncation, and